

Managing scientific collections as a federal knowledge asset

An update from the Interagency Working Group on
Scientific Collections

For CENDI, May 2014



Interagency Working Group on Scientific Collections (IWGSC)

- Established by White House in 2005
- Coordination among 15 Federal agencies and sub-agencies with scientific collections and/or granting programs
- Covers full spectrum of collection types
- Survey of object-based scientific collections owned by Federal government, 2007-8
- Parallel National Science Foundation (NSF) Survey
- **2009 IWGSC Report with seven recommendations**
- Mandate to implement first three from:
 - OSTP Director Dr. John Holdren
 - **America COMPETES Act renewal of 2010**

Scientific Collections:
Mission-Critical Infrastructure for Federal Science Agencies



A Report of the
Interagency Working Group on Scientific Collections
(IWGSC)

www.whitehouse.gov/administration/eop/ostp/nstc/docsreports/archives

The NSF Scientific Collections Survey: A Brief Overview of Findings

March 17, 2009

National Science Foundation

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Introduction

Scientific collections created and used in basic research are an integral part of the nation's scientific infrastructure. They hold specimens of plants, animals, microbes, fossils, minerals and other artifacts that together comprise a national legacy of biological diversity. Such collections are an essential resource to a broad range of scientists, including systematists, evolutionary biologists, ecologists, resource managers, educators, and environmental health researchers. Because the National Science Foundation (NSF) supports basic research projects in all fields of science and engineering, it has a stake in ensuring that collections created during the conduct of NSF-supported research are well-maintained and accessible to researchers through the use of modern technology and bioinformatics.

NSF supports collections through specific programs such as the Biological Research Collections Program and the Major Research Instrumentation Program, as well as indirectly through support for new collaborations and networks, imaging activities, improved access through the web, storage upgrades, and the incorporation of specimens from other collections. Furthermore, NSF expects that the projects it funds will provide direct access to the data obtained from scientific collections.

NSF is a member of the Interagency Working Group on Scientific Collections (IWGSC), which was tasked by the Committee on Science (COS) of the National Science and Technology Council (NSTC) with developing a comprehensive report on the current status of Federally owned and supported scientific collections in response to concerns over the condition of Federally owned and supported object-based scientific collections. To prepare

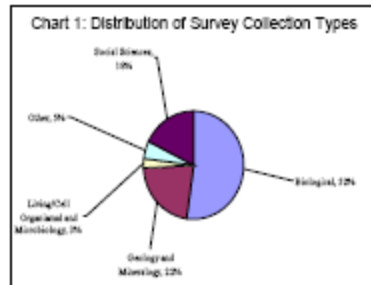
this report, the IWGSC conducted a survey of Federal agencies to collect information on, and report on, the scope, size, and condition of their scientific collections.*

Because NSF funds institutions to conduct research that involves collecting new specimens and supports improvements to collections but does not directly maintain scientific collections, NSF conducted a separate survey to assess the status of collections at a sample of institutions

that currently receive or have received NSF support since 1985. The results of the NSF survey will complement the data in the IWGSC's report.

Using its awards database, NSF identified 339 collection managers and 137 institutional administrators at 147 institutions that received support for collections since 1985 and invited them to participate in the survey. Seventy percent of the collection managers and 51% of the institutional administrators responded to the survey.

The survey asked respondents to provide information on all of their scientific collections, not just those receiving NSF-funds. As a result, they provided information on 611 collections in five broad categories: biological, geological and mineralogical, social sciences, living/cell organismal, microbiological, and other collection types (see Chart 1).



* The IWGSC survey is available at http://www.ostp.gov/galleries/NSTC%20Reports/Revision_1-22_09_CL.pdf.

Federally Supported Collections

General Findings

- USG owns and maintains diverse array of scientific collections that are important resources for mission-critical science
- USG is involved with collections in multiple ways
- Collections can have important impacts unrelated to their original use; can be difficult to foresee
- Collections continue to grow at regular, predictable rates, but support staff and funding resources are declining
- USG has an interest in coordinating management of Federal collections across agencies
- No single approach to managing collections fits all situations and budgets in Federal agencies

Recommendations now policy

■ Policies and best practices

- Identify and disseminate best policies and practices for organization, management, access, including online access, and long-term preservation

■ Budgeting for collections

- Collect and share information on budgeting for collection operations
- Ensure that collections' necessary costs are properly assessed and realistically projected

■ Accessibility of data and metadata

- Document holdings and make as much collections information as possible available on-line
- Develop online clearinghouse for information on the contents of and access to Federal scientific collections

OSTP scientific collections policy

- “Improving the management of and access to scientific collections”
- Issued March 20, 2014
- “Scientific collections ... an essential base for developing scientific evidence and ... resource for scientific research, education, and resource management.”
- Goal is “systematic improvement of the development, management, accessibility, and preservation of scientific collections ...”

OSTP policy -- Scope

- Federal agencies that own, maintain, or financially support permanent scientific collections
- Must develop collection policy within six months
- Applies to “institutional collections” = permanent = archival = museum = voucher = long-term assets
- Does not apply to “project collections” not intended for long-term preservation
- Agencies need to be able to define and review institutional versus project collections
- Also limited by law, agency mission, resource constraints, national security, etc.

Collections Policy Elements

- Collection mission and scope
- Legal authority
- Standards for managing collections, including accessioning, inventory, deaccession
- Standards for access and use
- Budgeting and cost projection

Also “federally funded” collections

3h. ... describe how the agency will apply its scientific collections policy as a term and condition, **as appropriate**, of providing funding for the acquisition and stewardship of scientific collections ... being managed by a third party or that the agency does not own, but supports or for which it has oversight responsibilities

Accessibility of data and metadata

- 3b = Clearinghouse for collections information
- Expansion of www.biorepositories.org, created by CBOL in 2007 in collaboration with GenBank, GBIF
- Goal of standardizing citation/linkage to voucher specimens



- Merger with Index Herbariorum, Biodiversity Collections Index, increased web-services
- Potential merger with ISBER, WFCC, GGBN registries
- Planned linkages to NCBI and GBIF registries

Interagency Microbial Forensics Advisory Board (IMFAB)

- Established by OSTP in 2010 to implement the 2009 *National Research and Development Strategy for Microbial Forensics*
- Brings together Federal departments and agencies with different perspectives on microbial threats
- Coordinates with IWGSC on collections issues
- Same basic issues -- locating collections resources, documentation of voucher specimens, ownership, access, etc.
- Diversity of collections relevant to biothreats, e.g., “agricultural” collections
- Survey conducted of 46 collections in six departments

Scientific Collections International (SciColl)

- IS: a global organization founded through OECD GSF to promote and coordinate object-based scientific collections, across all disciplines.
- WILL: facilitate a new generation of research that relies on the use of collections across traditional disciplinary boundaries.

Promoting access to research infrastructure: GRSciColl

- GRSciColl: a global registry of scientific collections
- Portal will provide top-level information about collections to promote knowledge and use of these collections beyond their discipline
- Multiple portals for specific communities, e.g., **US Government collections**, Index Herbariorum
- Includes natural history, biomedical, human cultural, and diverse other objects

SciColl Research Initiatives

- Objective: explore how scientific collections amassed by different disciplines can contribute to interdisciplinary research
- Four initiatives
 - Environmental Change
 - Emerging Diseases
 - Food Security
 - Human Migration
- www.SciColl.org